OIPE IAP66
JAN 20 2006
PATENT & TRADEMARK OFFICE

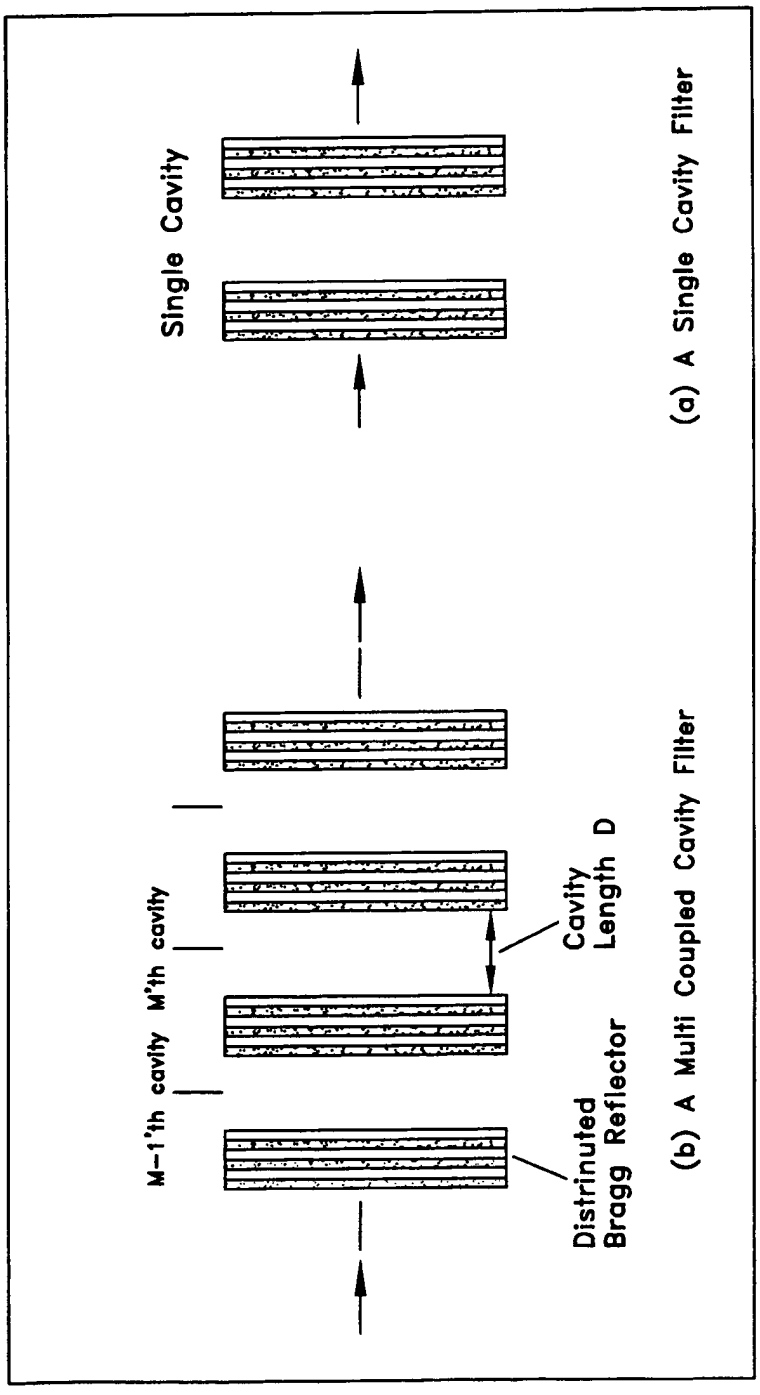


FIG. 1
(PRIOR ART)

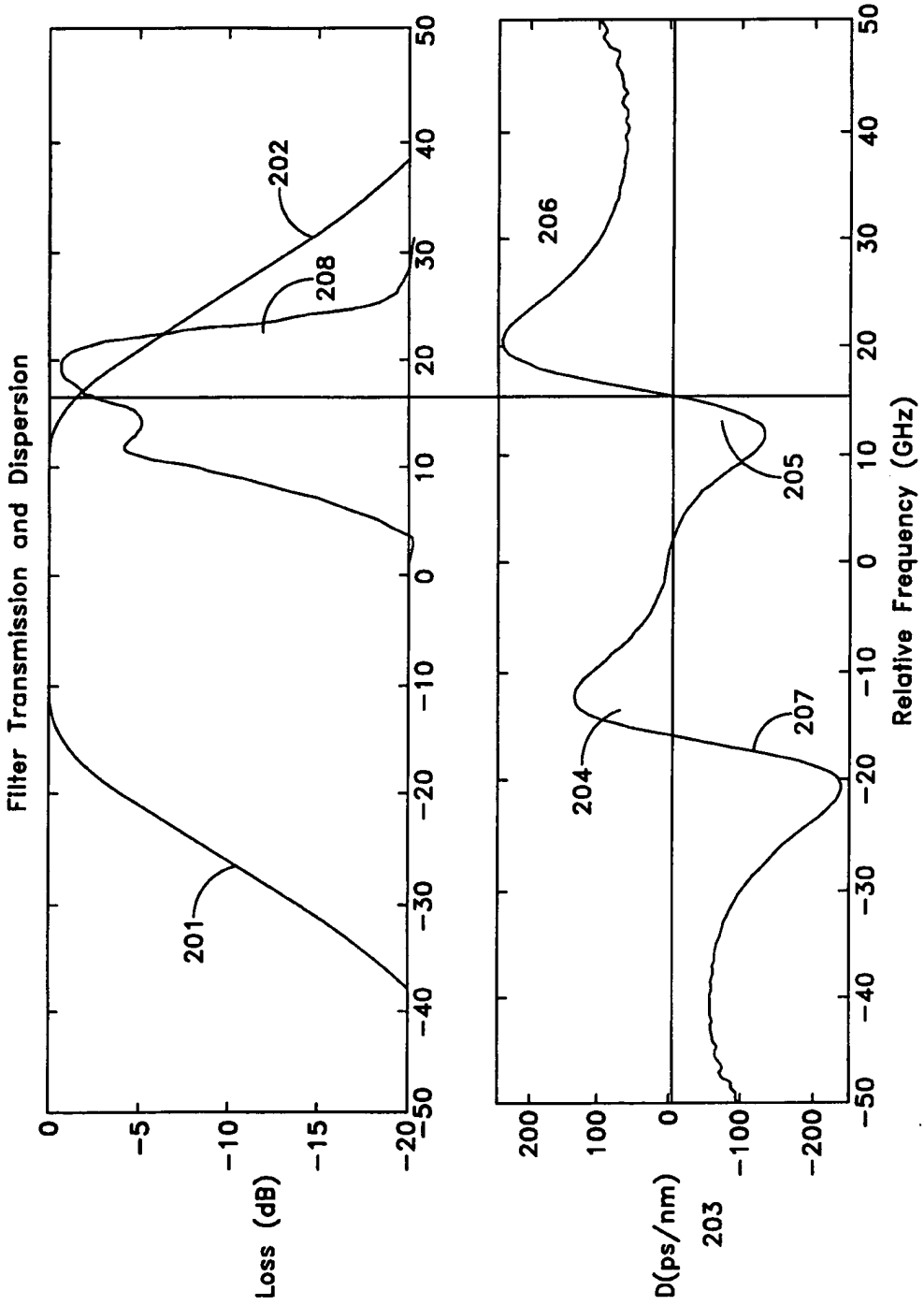


FIG. 2
(PRIOR ART)

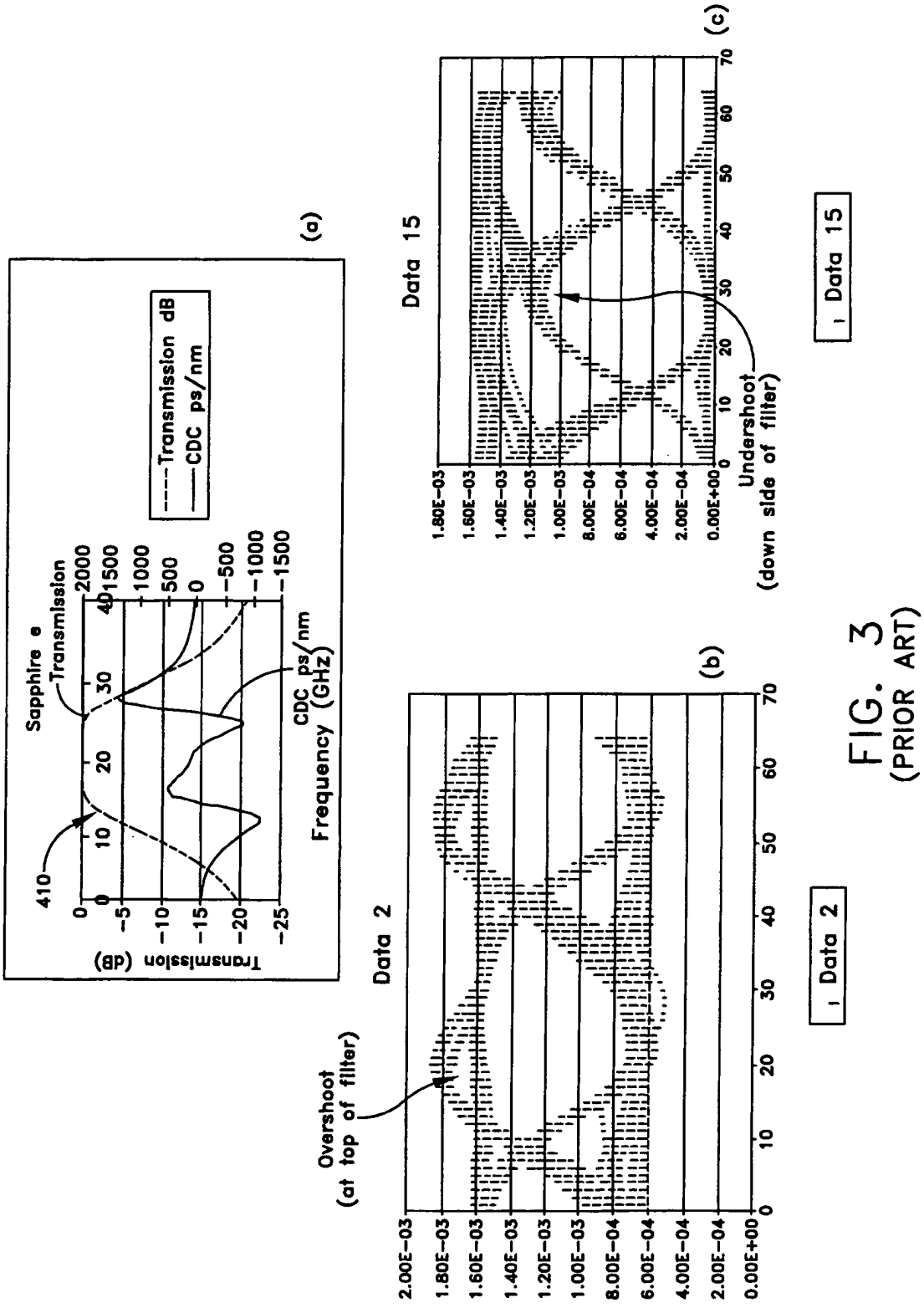


FIG. 3
(PRIOR ART)

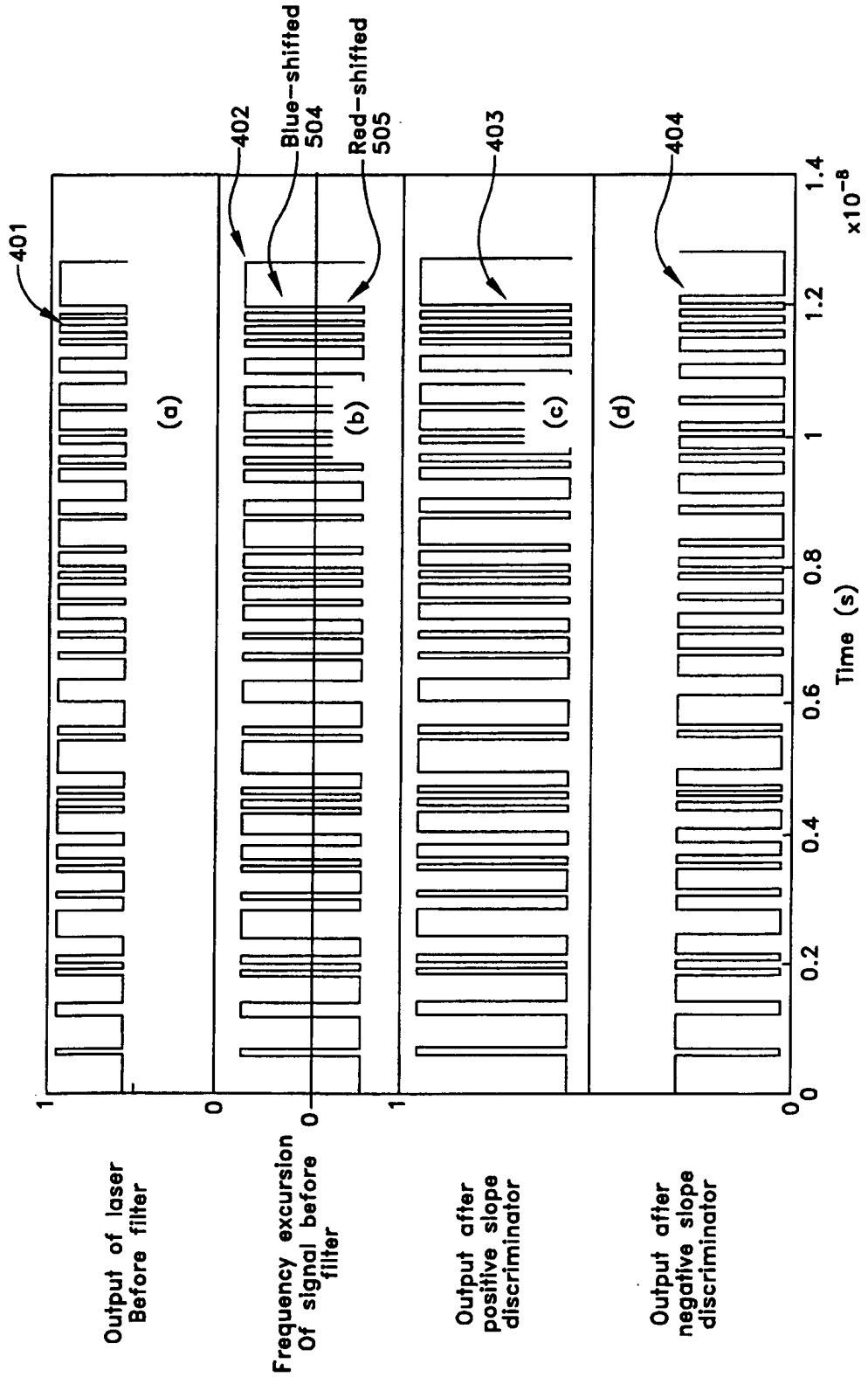


FIG. 4
(PRIOR ART)

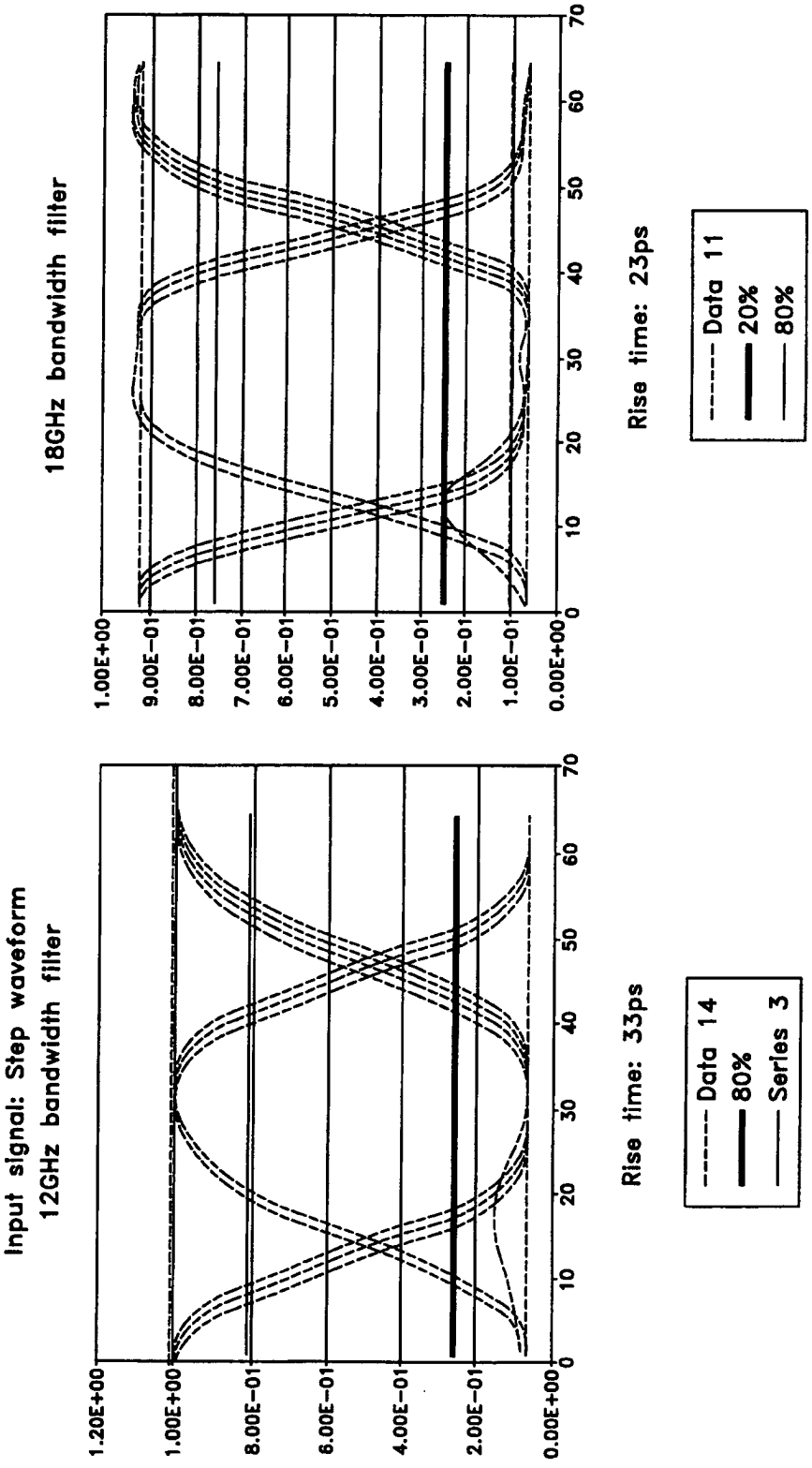


FIG. 5
(PRIOR ART)

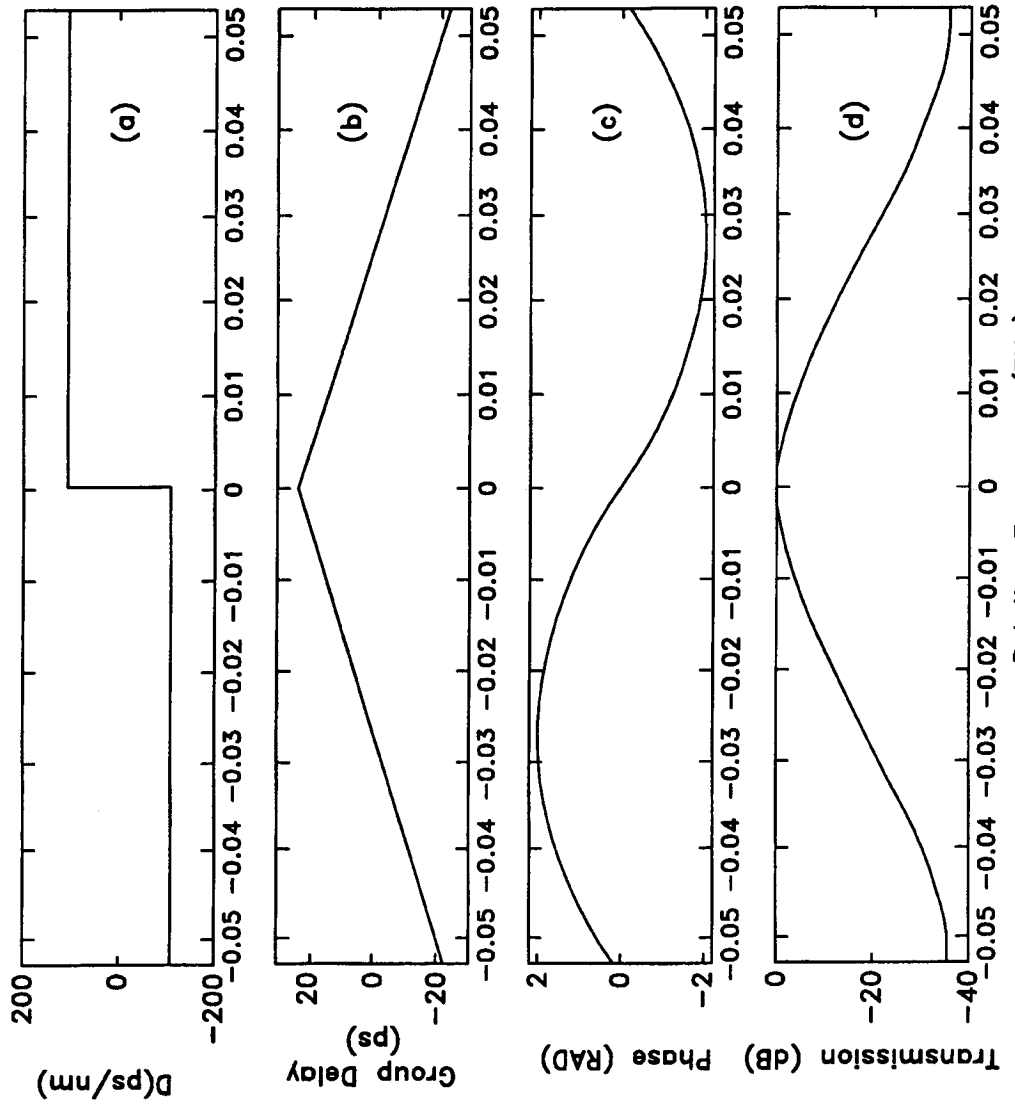

(a)
(b)
(c)
(d)
D(ps/nm)
Group Delay (ps)
Phase (RAD)
Transmission (dB)
Relative Frequency (THz)
200
0
−200
20
0
−20
2
0
−2
0
−20
−40
−0.05 −0.04 −0.03 −0.02 −0.01 0 0.01 0.02 0.03 0.04 0.05

FIG. 6

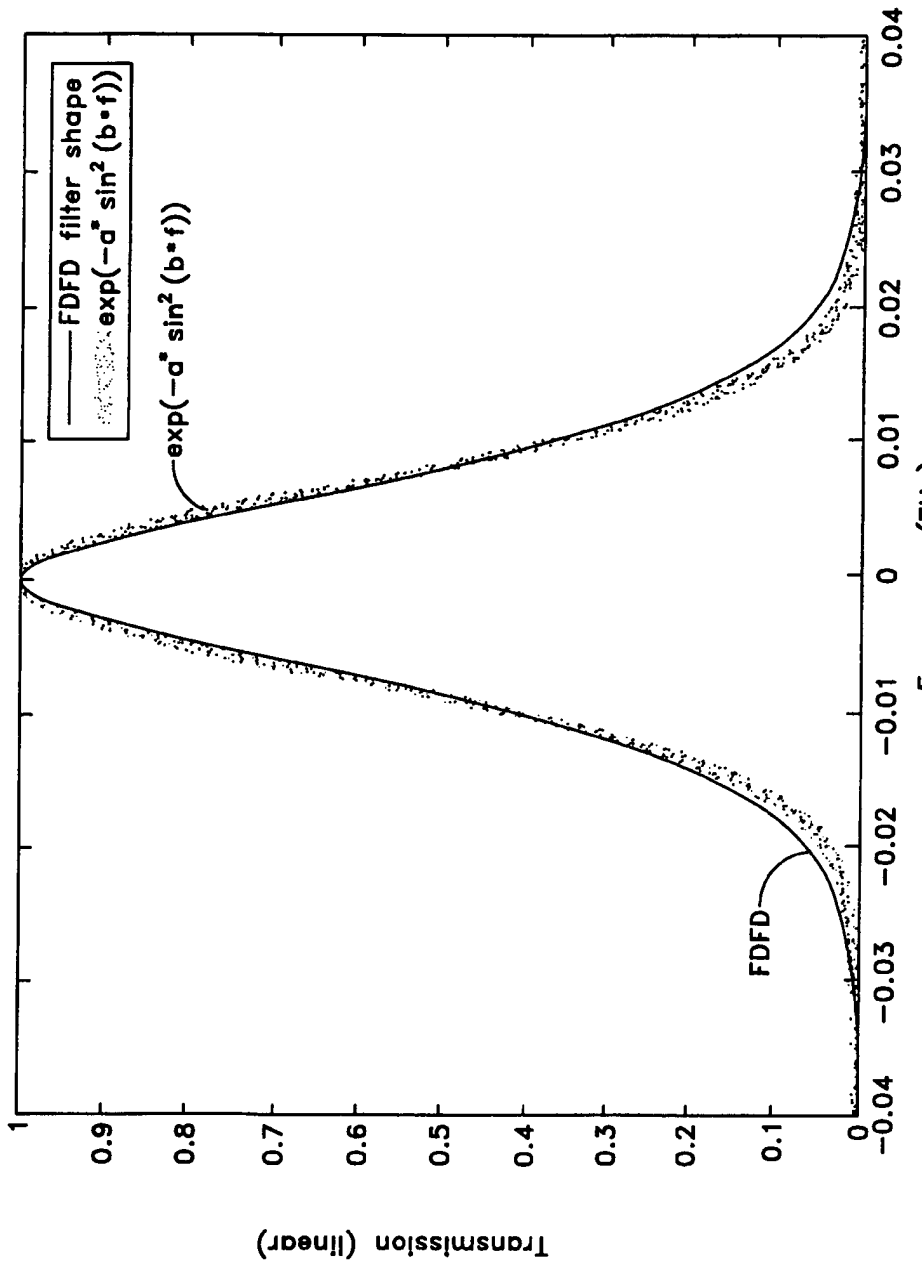

FDFD filter shape
exp(−a* sin² (b*f))
exp(−a* sin² (b*f))
FDFD
Transmission (linear)
Frequency (THz)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
−0.04
−0.03
−0.02
−0.01
0
0.01
0.02
0.03
0.04

FIG. 7

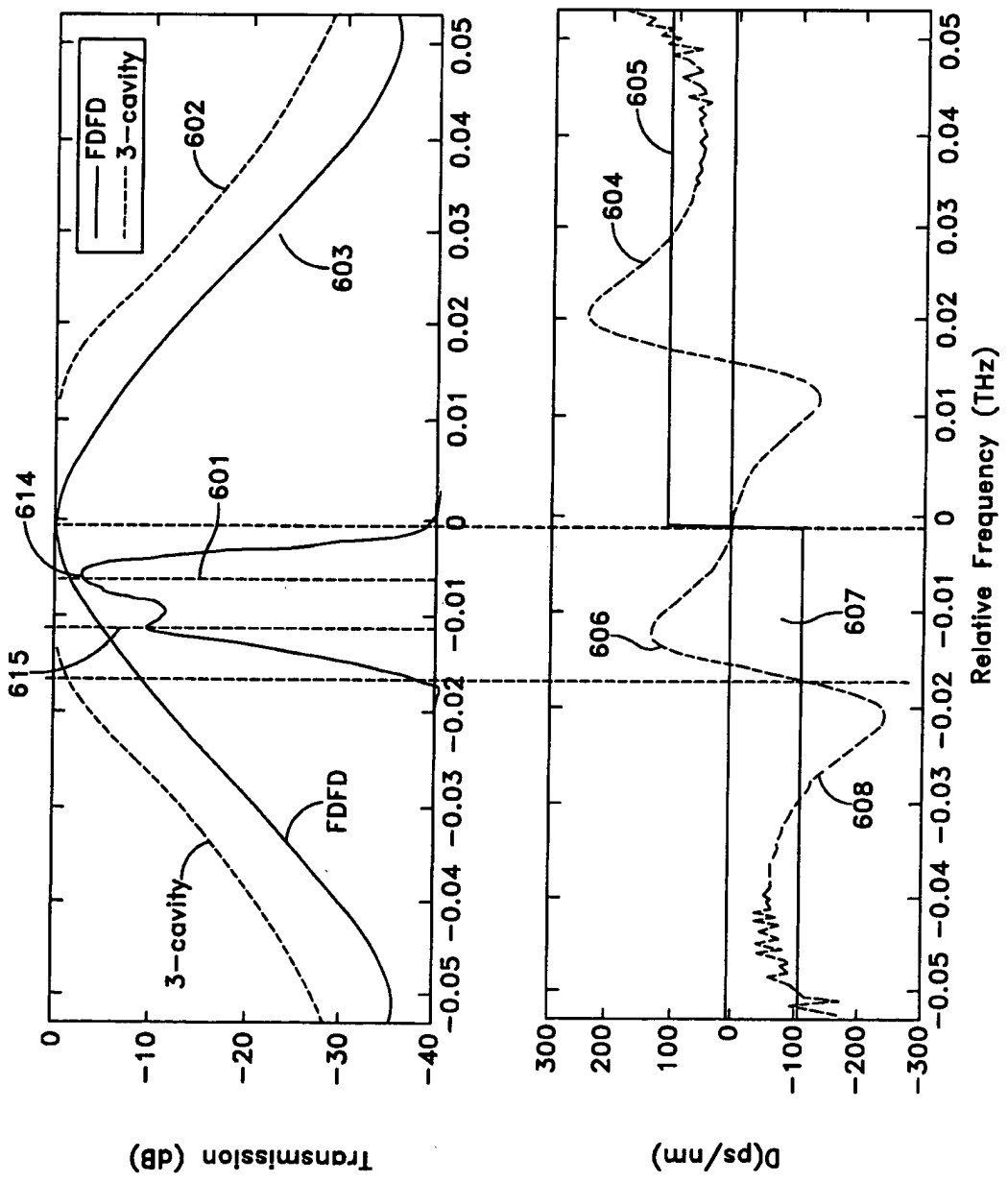

FDFD
3-cavity
602
603
601
614
615
604
605
606
607
608
0
-10
-20
-30
-40
300
200
100
0
-100
-200
-300
-0.05
-0.04
-0.03
-0.02
-0.01
0
0.01
0.02
0.03
0.04
0.05
Transmission (dB)
D(ps/nm)
Relative Frequency (THz)

FIG. 8

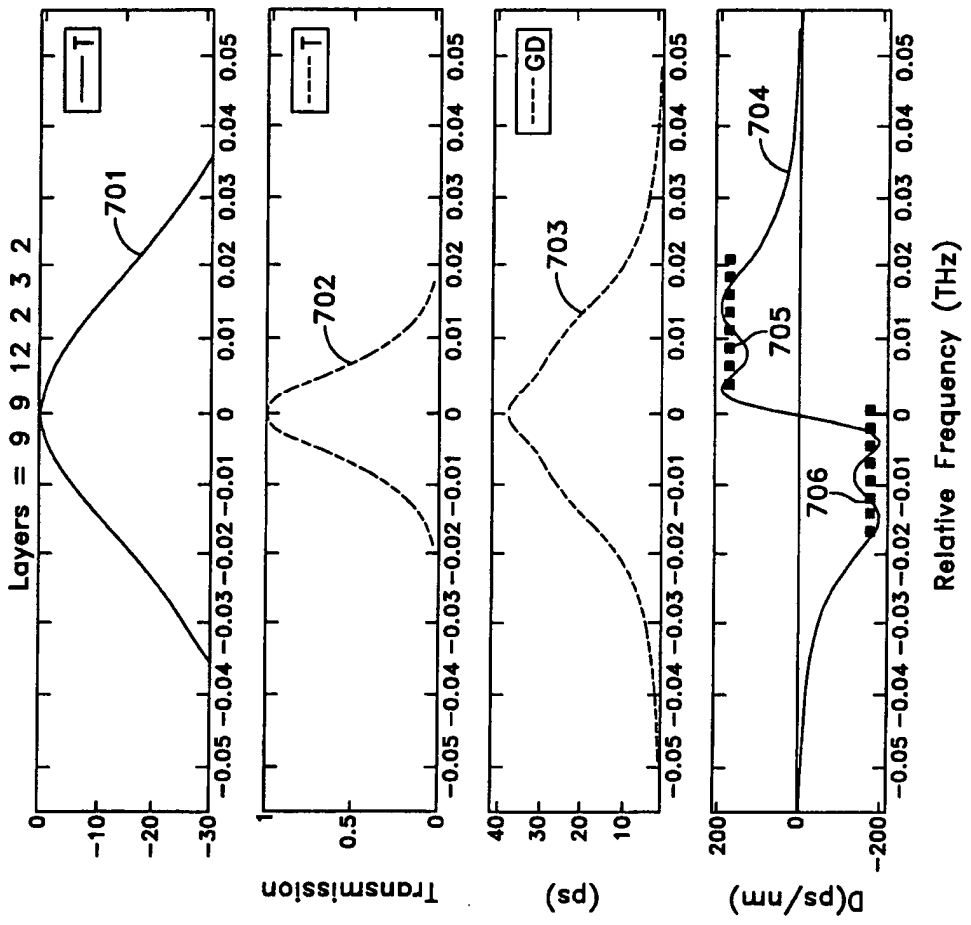

Layers = 9 9 12 2 3 2
T
701
T
702
GD
703
704
705
706
Transmission
(ps)
D(ps/nm)
Relative Frequency (THz)

FIG. 9

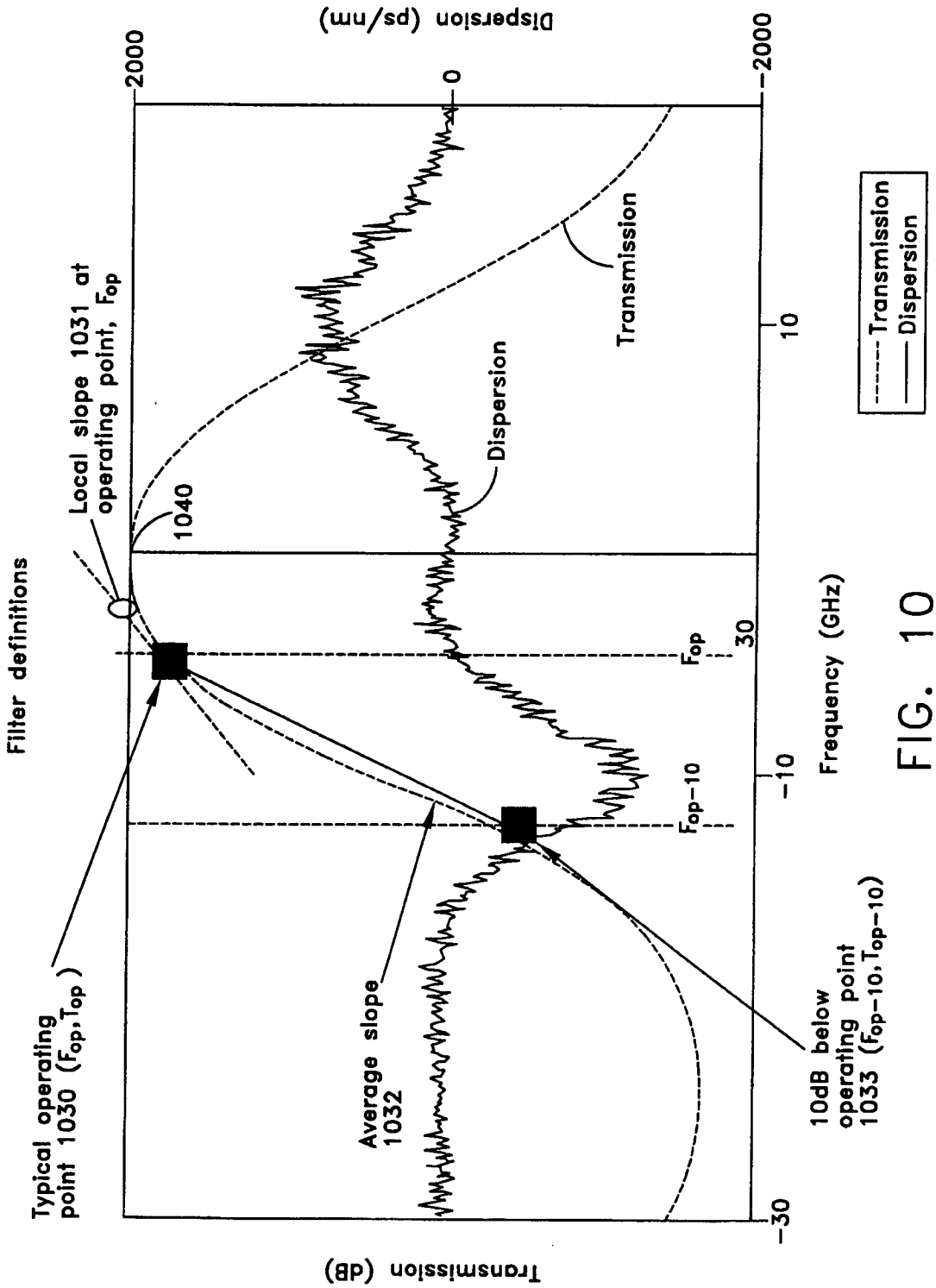

Dispersion (ps/nm)
2000
0
-2000
Transmission (dB)
-30
-10
10
30
Frequency (GHz)
Filter definitions
Local slope 1031 at operating point, Fop
1040
Dispersion
Transmission
Fop
Fop-10
Typical operating point 1030 (Fop,Top)
Average slope 1032
10dB below operating point 1033 (Fop-10, Top-10)
Transmission
Dispersion

FIG. 10

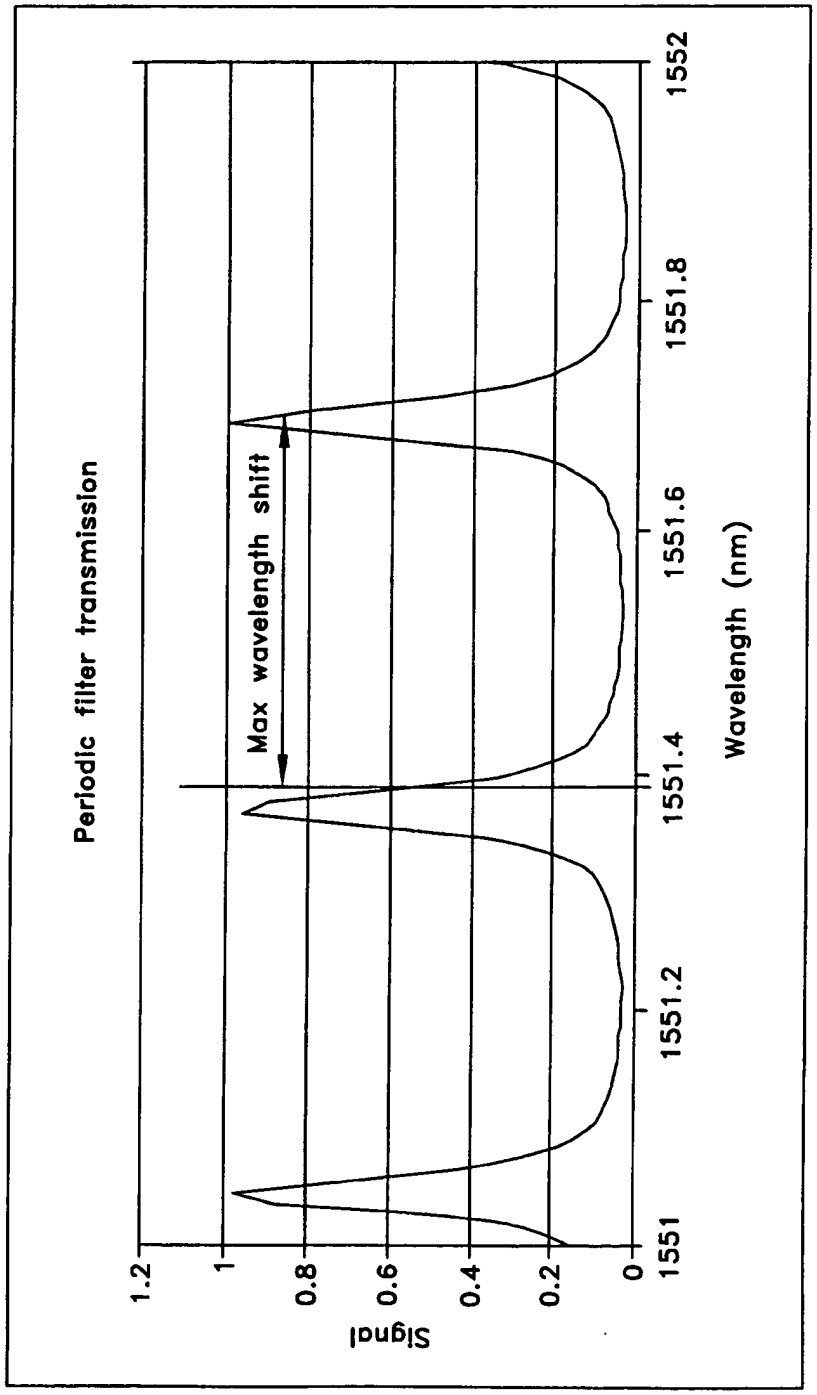

Periodic filter transmission
Max wavelength shift
Signal
1.2
1
0.8
0.6
0.4
0.2
0
1551
1551.2
1551.4
1551.6
1551.8
1552
Wavelength (nm)

FIG. 11

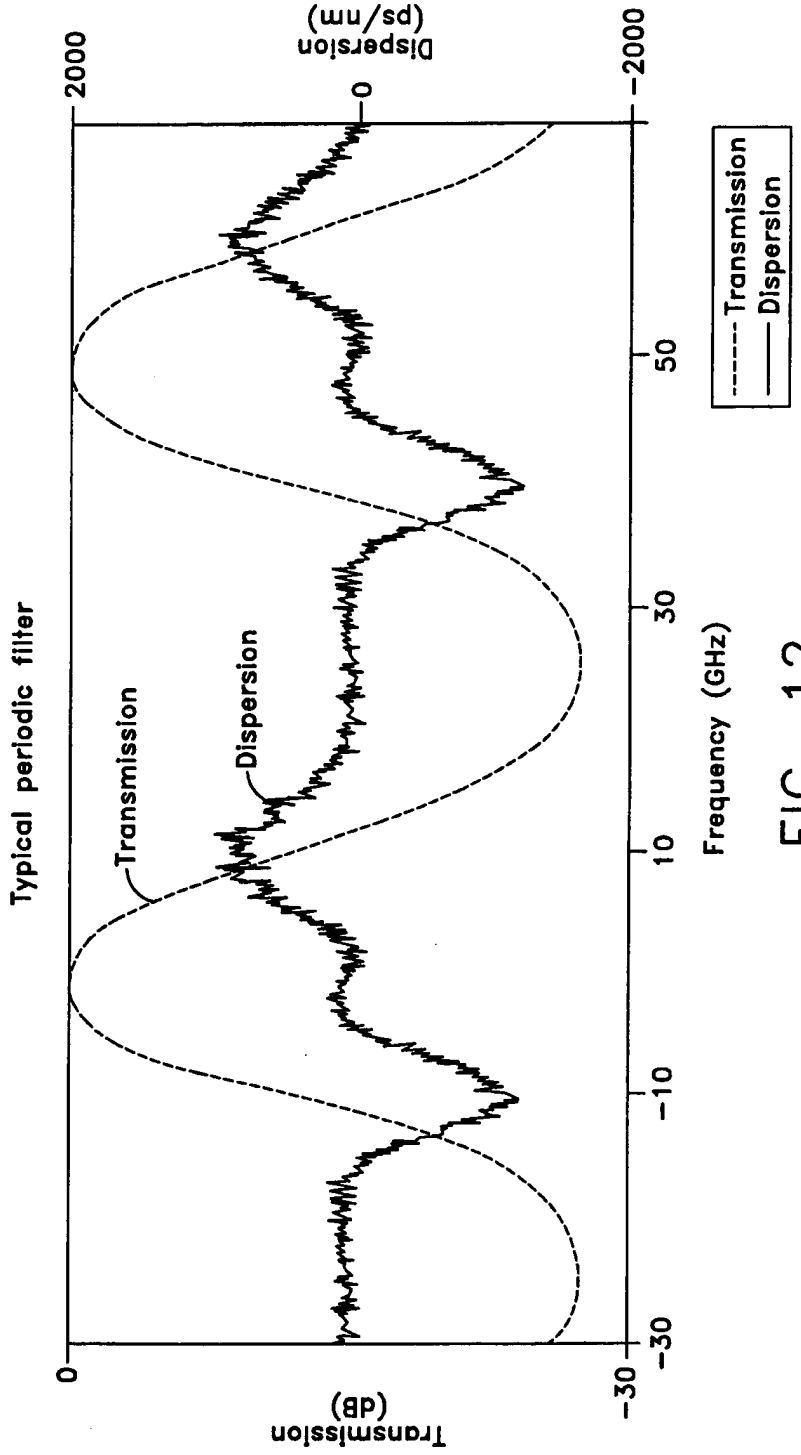

Typical periodic filter
Transmission
Dispersion
Transmission (dB)
Dispersion (ps/nm)
Frequency (GHz)
0
-30
2000
-2000
10
-10
30
50
Transmission
Dispersion

FIG. 12

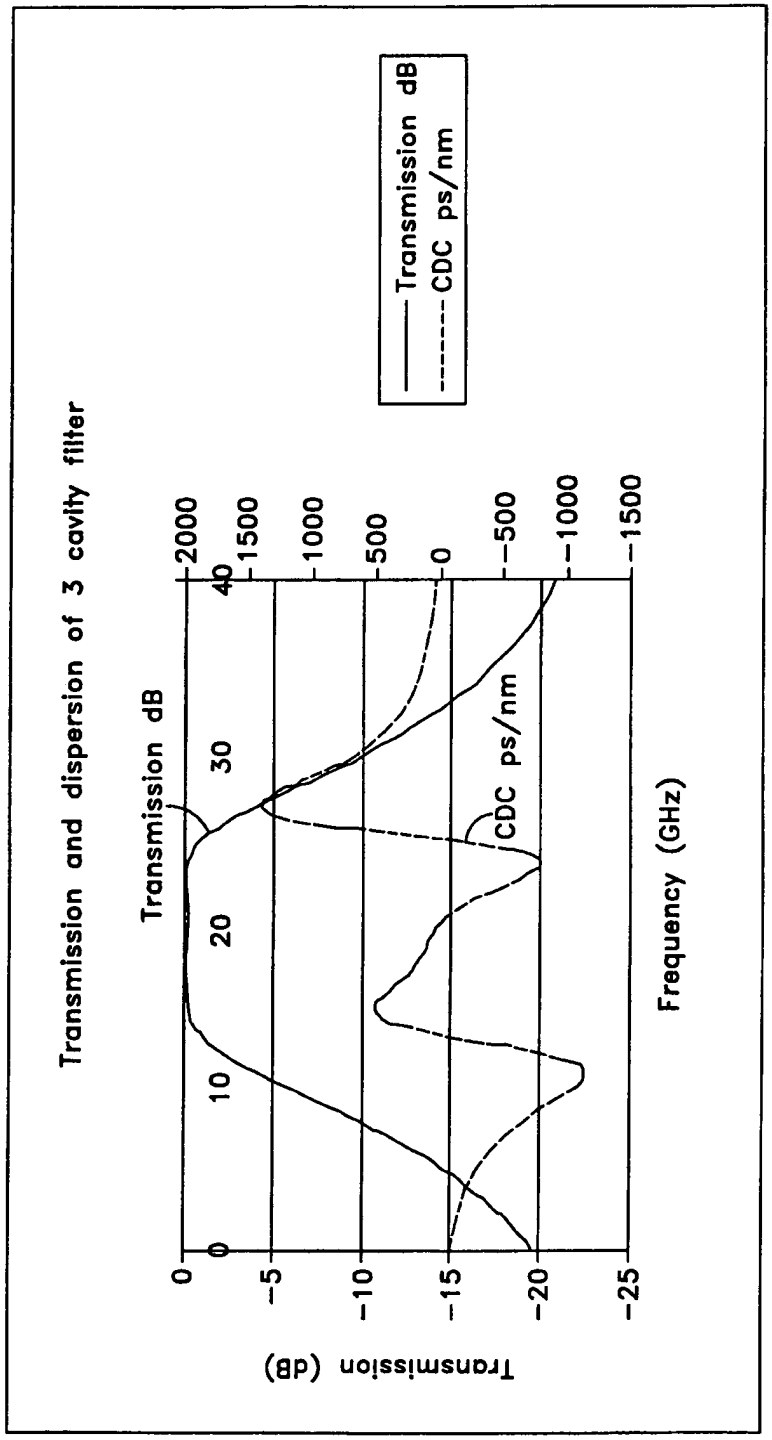

Transmission and dispersion of 3 cavity filter
Transmission dB
CDC ps/nm
Frequency (GHz)
Transmission (dB)
Transmission dB
CDC ps/nm
0
10
20
30
40
0
-5
-10
-15
-20
-25
2000
1500
1000
500
0
-500
-1000
-1500

FIG. 13

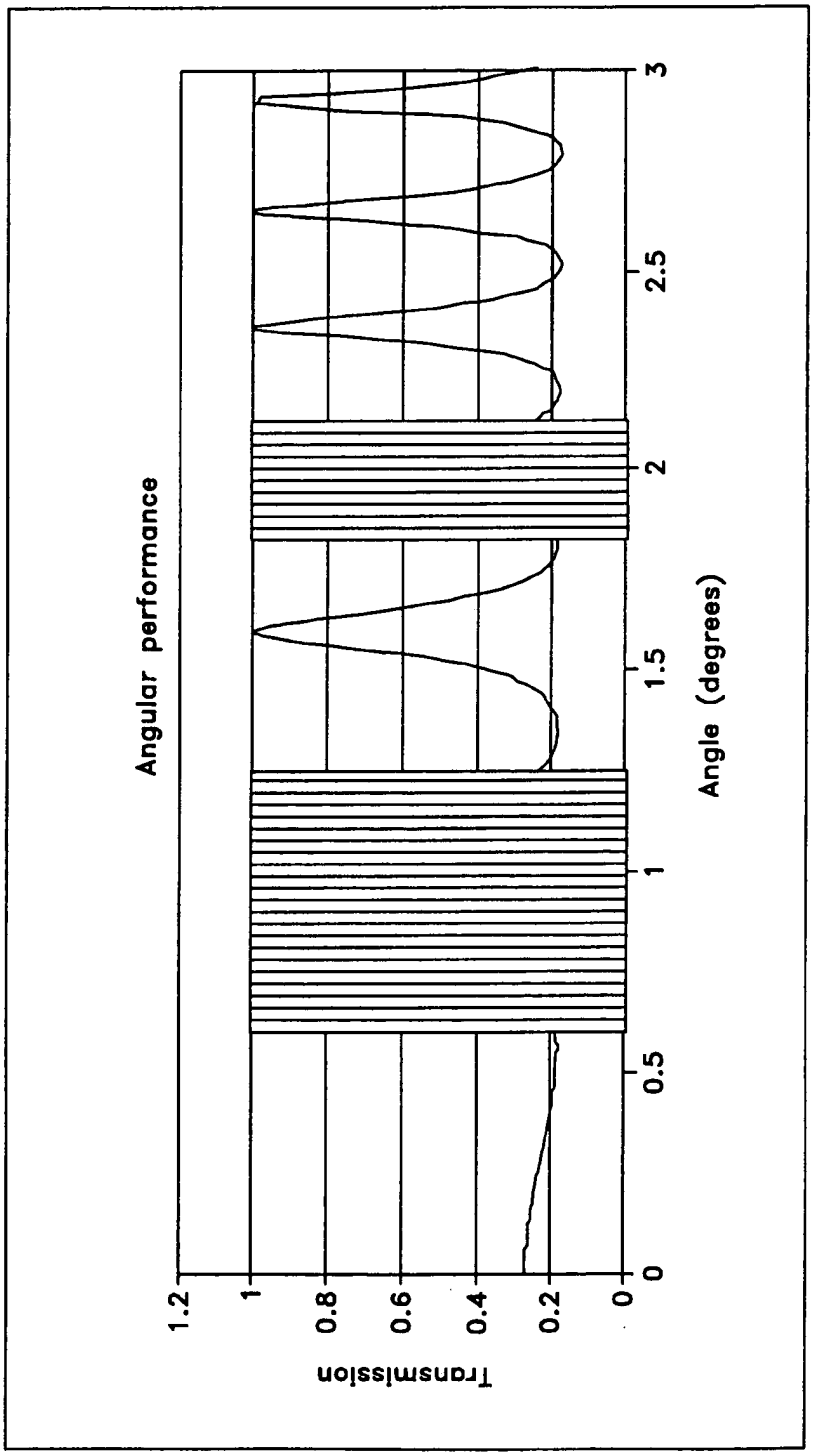

Angular performance
Transmission
1.2
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5
2
2.5
3
Angle (degrees)

FIG. 14

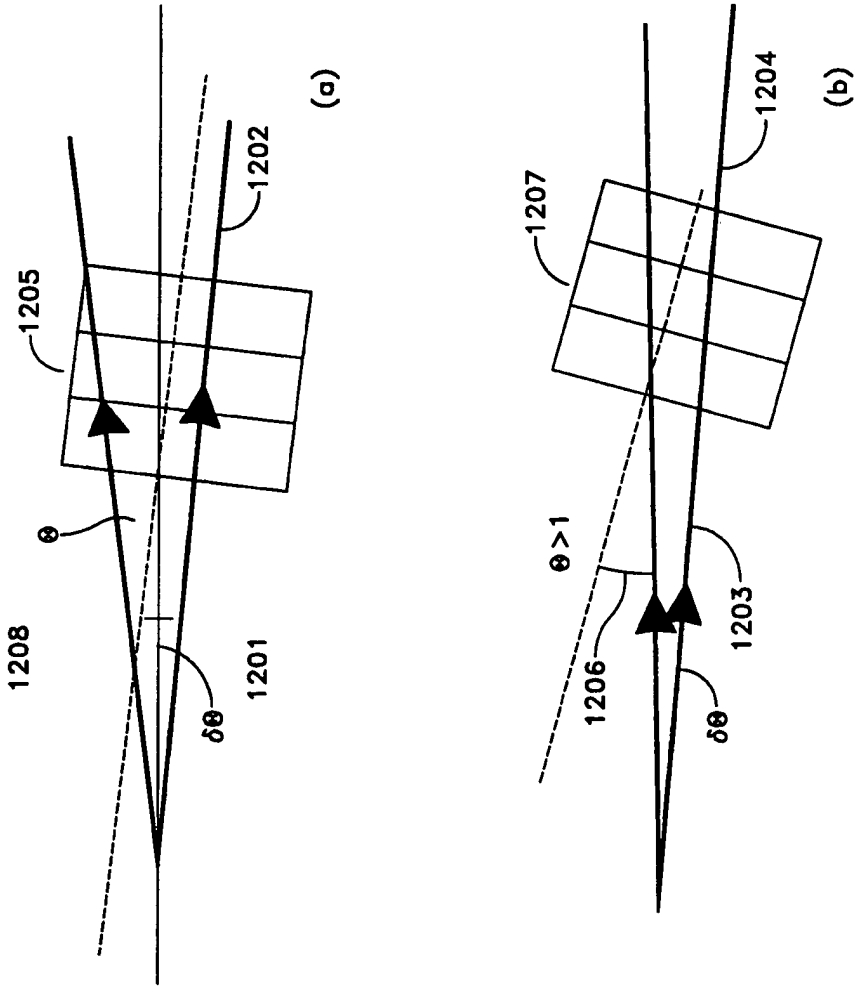
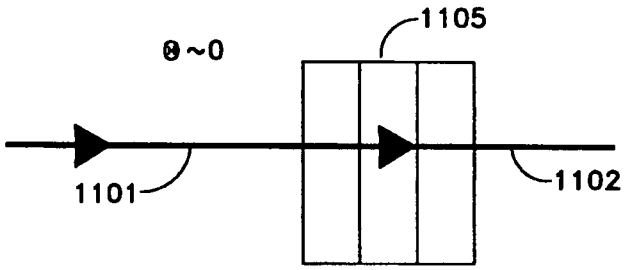
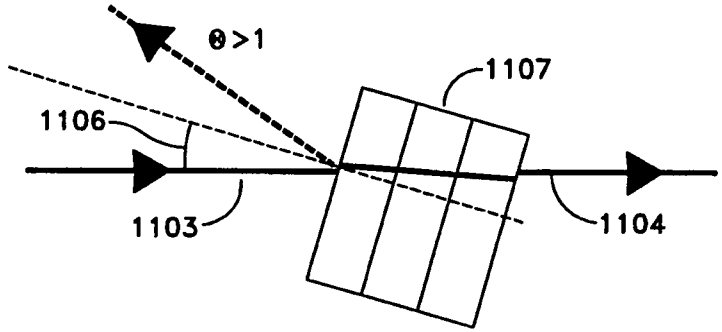


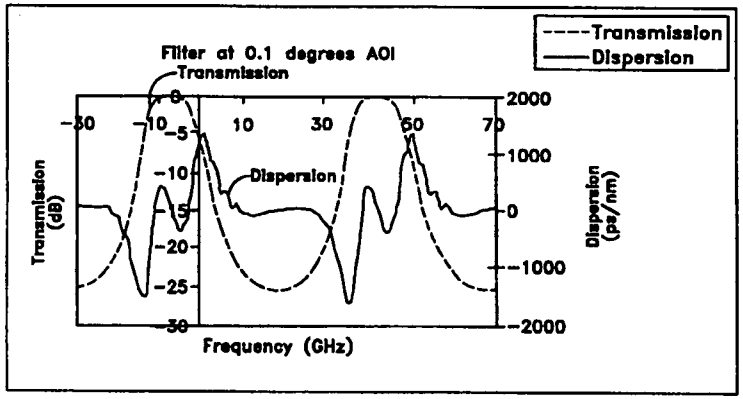
FIG. 15



3 cavity etalon
normal incidence



3 cavity etalon
non-normal incidence



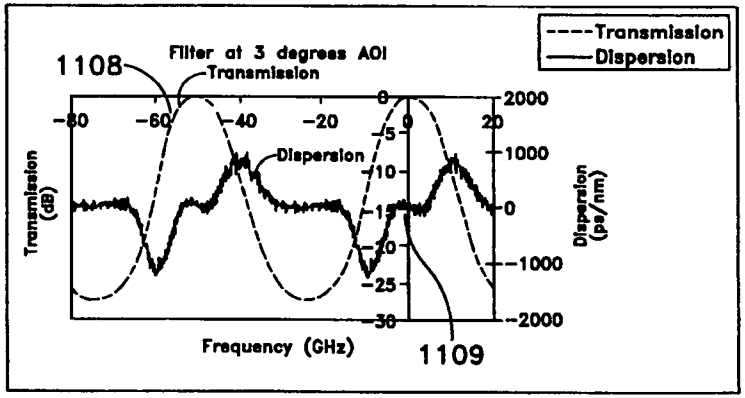


FIG. 16

Replacement Sheet